Centering Community and Children: Artifacts in Mathematics Methods Courses

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The poster highlights how two Mathematics teacher educators leverage the TEACH Math (Teachers Empowered to Advancing CHange in Mathematics; Turner et al., 2012) framework, a research base funded by the National Science Foundation. The primary purpose of TEACH Math was to theorize about how teacher candidates can learn about how to connect Children's Mathematical Thinking (Carpenter et al., 2015) and children's funds of knowledge (Moll et al., 1992) in ways that made meaningful connections between theory and practice. The TEACH Math research group developed several modules for Mathematics teacher educators to use in their methods courses so that teacher candidates could learn to attend to "children's multiple mathematical knowledge bases" (Turner et al., 2012). The primary intention of this poster is to show a series of artifacts, based on the TEACH Math modules, that support the authors' practice of preparing new elementary school teachers as they learn about children's multiple mathematical knowledge bases (Chao et al., 2019). As two authors from the United States who are elementary Mathematics teacher educators, this poster offers a selection of artifacts that serve as activities and assignments. The first author is a former middle and high school Mathematics teacher who works with students from primarily Mexican-American and Central American communities in the local area; students are in a year-long embedded experience in an elementary class for an entire year as they complete their coursework and tracking experiences with a certified teacher. The second author is a former high school Mathematics teacher who taught along the border of Mexico and the United States with primarily students of Mexican descent. Currently, she works with bilingual elementary preservice teachers through a course, Early/Elementary Mathematics Methods, that is required as part of the Professional Development Sequence that lasts two years. The following artifacts will be offered in the poster: 1) Math

autobiography/Numbers about me (as developed by Dr. Luz Maldonado); 2) Case Study (Lesson Plan/Mock Parent Conference). For the Numbers About Me activity, the poster highlights how teacher candidates find numbers that reflect meaningful aspects of their lives (e.g., their age, how many pets they have, their favorite baseball player's jersey number). The Numbers About Me artifact humanizes the teacher candidates' experiences in the world and how numbers show value (both mathematical and human experience). For the Case Study Module, the poster will include: 1) interviews with children; 2) problem-solving activities; 3) community walks; and 4) lesson plans that rehumanize children's experiences and brilliance. One example, shared by the first author, is related to the community walk, mathematics problem-solving activities that could be integrated into a mathematics lesson, and reflections on what preservice teachers learned from this community walk. The details of these activities will be highlighted with images on the poster. Another example comes from the first author's methods class. Figure 1 shows a Venn Diagram the teacher candidate, Ms. Grace, created with a child, Araceli, a 7-year-old child (all names are pseudonyms). The second image shows how Ms. Grace decided on the next steps to support Araceli's thinking to her parents in the mock parent-teacher conference. The details of these activities will be highlighted with images on the poster.

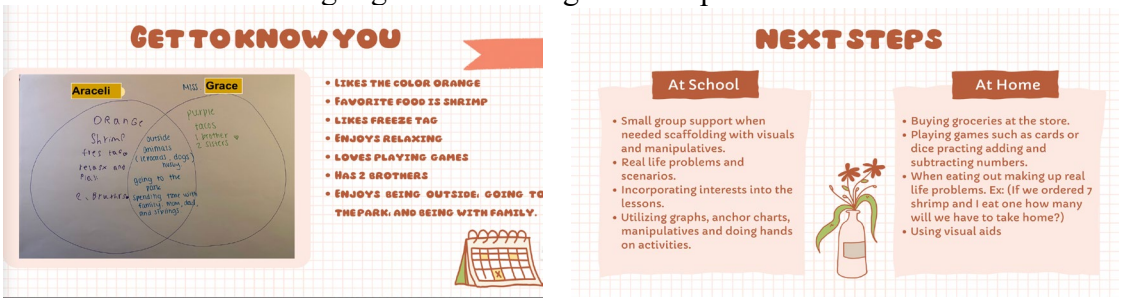

Figure 1. Venn Diagram and Mock Parent Teacher Conference Next Steps.

The authors intend to engage participants in how teacher educators can utilize course assignments and experiences in elementary classrooms in ways that connect to children's multiple mathematical knowledge bases (Chao et al., 2019). By rehumanizing the work of Mathematics teacher education in the worlds of children, their families, and communities, the poster intends to show how methods courses can represent the notion of multiple mathematical knowledge bases. Furthermore, the authors intend to discuss the poster's implications and discussions as a means of fostering connections for (and with) teachers and teacher educators across multiple geographic spaces such as North America, Central America, and the Caribbean.

References

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